



# Universidad Tecnología de México (UNITEC)

CUSTOMER SUCCESS

## Passing Application Performance with Flying Colors using Precise i<sup>3</sup> Solution

**UNITEC, a growing institution of higher education in Mexico, relies on Precise application performance management software to keep its Oracle database applications tuned and operating at peak performance. Precise i<sup>3</sup> is passing the test by increasing application response time by as much as 300 percent and decreasing troubleshooting time by 40 percent, all while showing 100 percent return on investment in 18 months.**

### **A commitment to higher education and operational efficiency**

“Science and Technology with a Human Touch (Ciencia y Técnica con Humanismo)” is the motto of Universidad Tecnológica de México (UNITEC), an institution of higher education serving over 42,000 students on eight campuses located in Mexico City, Monterrey, and Guadalajara. Founded in 1966, UNITEC prides itself on its Mexican heritage and leadership, while also forming alliances with foreign institutions such as Madrid’s Escuela de Organización Industrial (School of Industrial Organization) and commercial enterprises such as Sun Microsystems, Inc. and Berlitz. UNITEC offers a range of undergraduate and postgraduate courses in the fields of economics, social sciences, health sciences, engineering, and design, all aimed at one goal: extending access to higher education to the communities it serves.

Like all modern universities, UNITEC supports its educational activities with an information technology (IT) system. Over the years, UNITEC’s IT department has developed a range of business applications for financial uses such as payroll and accounts payable as well as human resources and facilities management. Students, faculty, and staff communicate and share files, while prospective students and others in the general community access the UNITEC website to get information about courses, financial aid, research grants, and the university calendar. In the past, UNITEC developed its applications using a number of different tools, but recently the university standardized on and began migrating all applications to Oracle Application Server 10g. The IT infrastructure uses Sun servers running the Solaris Operating System and HP servers running Microsoft

### **Organization Profile**

Founded in 1966, Universidad Tecnológica de México (UNITEC) serves over 42,000 students on eight campuses in Mexico and offers a range of undergraduate and graduate courses

### **Industry**

Education

### **Solution**

Application Performance Management,

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Database Administrator  
**UNITEC**

**The Application performance management solution from Precise helped UNITEC improve response time for business-critical applications by as much as 300 percent**

Windows 2000 Server, both of which power Oracle Database 9i and 10g software used to manage application and transaction data.

### **Growing numbers of users strain application performance**

Recent years have seen greatly increased enrollment at UNITEC—and trouble in IT land. With 3,000 users a day initiating more than 10,000 database accesses, response times were degrading. The university's IT department, consisting of seven database administrators (DBAs), six operating system administrators, and 30 application developers, found themselves under pressure to solve the problems, but without the right tools. Cesar Madrigal Lezama, database administrator at UNITEC, describes the frustration. "Users were complaining about degradation in application response times, especially those that accessed data," recalls Madrigal. "Since we are the database experts, the application group looked to us to help them troubleshoot the problem, but we could only tell them which application was slowing down, not why. We had no way of helping them locate the source of the problem."

In addition, database administrators had no warning when the infrastructure would start to suffer from poor performance and thus were often forced to react to problems rather than anticipate them. They didn't know where to focus their troubleshooting efforts until an irritated student complained of slow response times or, worse, a database application crashed and large numbers of students, faculty, and staff were unable to work. The situation was becoming intolerable. "We had to find a way to anticipate problems," explains Madrigal. "It was essential to stop reacting and start proactively monitoring and tuning our database applications."

### **The need for visibility—and proactive response**

Armed with the list of requirements, UNITEC went shopping for application performance management (APM) software. Monitoring the ability to look into the operation of their databases and applications, both in real time and historically, was a high priority. They also needed a product that would alert them early to potential difficulties, before application response began to degrade significantly. And for unavoidable or unforeseen problems, they sought a method of helping developers in their troubleshooting by providing actionable information about the nature of the problem, ideally at the SQL Server statement level. Such a tool would also be helpful during development, potentially shortening the time to deployment for application developers.

### **Precise goes to the head of the class**

Working under tight budget constraints, UNITEC decided to initiate a competitive evaluation process for this major software acquisition. An early contender was BMC, which offered to install its Patrol software for a trial with no obligation. The trial didn't go well. "Their people took more than

two weeks to install the software,” remembers Madrigal. “It needed a lot of attention to keep it running properly. Based on that experience, we decided it wasn’t the best way for us to go.”

At the same time, Madrigal and his group were also considering Precise i<sup>3</sup>. Precise Software Solutions was no stranger to UNITEC. “So when our Precise sales rep told us about Precise i<sup>3</sup>, we decided to dig a little deeper.”

“The database administrators were impressed by what they learned. An integrated software solution with a built-in methodology for monitoring and improving application performance, Precise i<sup>3</sup> met UNITEC’s requirements for monitoring and alerts, and it had the features the university needed for effective troubleshooting. Precise i<sup>3</sup> also promised ease of use, an important feature for UNITEC’s busy DBA group. The university’s positive experience with other Precise products tipped the scales: at the end of the evaluation process, UNITEC placed an order for Precise i<sup>3</sup>.

### **Easy to install, easy to use**

The superiority of the Precise solution was literally apparent on Day One. Within four hours the three components of Precise i<sup>3</sup> were installed and fully functional. The database administrators found the Windows-like graphical user interface intuitive and easy to use and were soon using it to investigate the performance of their applications and databases. The first thing that caught Madrigal’s eye was how Precise i<sup>3</sup> provided a comprehensive view of the status for each UNITEC application and database. “The dashboard in Precise i<sup>3</sup> shows us the resources each user and program are consuming, in an easy-to-understand graphical format,” he explains. “It’s simple to identify when a particular program requires more than its share of the available Oracle resources.”

### **Alerts prompt proactive measures**

While manual monitoring was clearly a powerful tool, the DBA team moved to improve their responsiveness using the Alerts feature of Precise Inform. They set limits and thresholds for key database measurements such as CPU loads, buffer cache levels, and I/O wait times, which are parameters known to provide an early warning about a potential application or database failure. “Precise Inform watches limits and thresholds continuously, so our database administrators don’t have to,” explains Madrigal. “If any parameter exceeds its limits, the administrator on duty receives a pager call and an e-mail describing the nature of the problem. He can get back to his console and begin troubleshooting right away. Because the Alerts feature gives us such a head start, we often correct the underlying problem before users even know about it.”

### **Analysis tools drill down into problems**

Precise i<sup>3</sup> doesn’t stop with alerting the DBA team to potential problems; it also offers powerful tools to investigate the situation and even suggests

solutions. Precise Insight gives the DBA team a complete end-to-end view of attention to the source of the performance problem.

"We use Precise Insight on our business-critical servers and it helps us improve response times tremendously," Madrigal says. "The graphical user interface helps us pinpoint what's going on inside the database. We identify database performance problems much faster with Insight."

To dig deeper into problems and find solutions, UNITEC relies on Precise Indepth. "Precise helps us drill right down to the problematic SQL statement," says Madrigal. "The SmarTune feature of Precise Indepth suggests specific corrective actions, for example, adding an index on the statement. And it quantifies the resulting improvement, too. We save a lot of time troubleshooting and our applications are running better."

### History lessons for the DBA team

As successful as Precise i<sup>3</sup> has shown itself to be for daily monitoring, response, and troubleshooting, it also plays a more strategic role at UNITEC, thanks to the Performance Warehouse feature of Precise i<sup>3</sup>. Both Precise Insight and Precise Indepth constantly sample the applications and databases to accumulate performance data, which is then stored in history files. At regular intervals set by UNITEC every month, Precise i<sup>3</sup> downloads the history files into Performance Warehouse, where they are analyzed and summarized. Database administrators access this information through the Precise i<sup>3</sup> GUI. "Using the Precise i<sup>3</sup> Performance Warehouse, we get a clear picture of the long term performance of our database applications," Madrigal explains. "It's important to see trends so that we can make more informed decisions about growing and managing our infrastructure in the future."

### Making the grade at UNITEC

Two years after UNITEC first installed it, Precise i<sup>3</sup> has earned an A+. Every application is running at least 30 percent faster, with some key applications showing a 300 percent improvement in response time. Not surprisingly, complaints have dropped dramatically as well. "Before installing Precise i<sup>3</sup>, we would get an average of 15 calls a day complaining about response time," Madrigal remembers. "Now it's dropped to under 5. Users are happier, no question about it." UNITEC's IT management is happier, too, thanks to an overall reduction in troubleshooting time of 30 percent.

That improvement leaves more time for proactive projects for the DBA team and also speeds the time to deployment of new and migrated applications by as much as 20 percent. The performance improvements gained from Precise i<sup>3</sup> have helped UNITEC cope with an ever-growing demand for computing services. With the total transaction volume rising by

## SOLUTION AT A GLANCE

### Business Drivers

- Provide reliable computing services to growing number of students, faculty, and staff
- Reduce troubleshooting costs and schedule delays in application development

### Technology Challenges

- Optimize performance and availability of critical applications and database
- Provide detailed information to the SQL Server statement level about causes of performance problems

### Solution

- Integrated Precise i<sup>3</sup> for monitoring and managing Oracle database services supporting various applications used by students, faculty, and staff

### Precise Products

- Precise i<sup>3</sup>

### Technology Environment

- Server Platform: Sun Enterprise 10000 and Sun Fire V880, 480, and 280 Servers running the Solaris Operating systems
- Applications: Enterpris applications based on Oracle Databased and Oracle Application Server 9i and 10g

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15 percent a year, Madrigal and the rest of the DBA team are counting on Precise i<sup>3</sup>. "We've stayed on the Precise upgrade path ever since we installed i<sup>3</sup>," remarks Madrigal. "It's so reliable that we haven't had to use our Precise Basic Support agreement."

Beyond the tangible results, Madrigal cites peace of mind as a major benefit that the DBA team has gained from Precise. "Before Precise i<sup>3</sup>, we were constantly on the edge of our chairs, waiting for the phone to ring with the next complaint about response time," he says. "Now we are more in control, more productive, and more relaxed. It's hard to imagine how we ever did our jobs without Precise i<sup>3</sup>."

More customer success stories can be found at: [www.precise.com](http://www.precise.com)

## **BUSINESS VALUE AND TECHNICAL BENEFITS**

### **Return on Investment**

- 100% ROI in 18 months

### **Application performance**

- 300% improvement in response time for key applications, with all applications running at least 30% faster

### **Productivity**

- 30% decrease in troubleshooting time for database problems

### **Availability**

- Improved availability for applications handling 3,000 users and 10,000

### **Time-to-Deployment**

- Up to 20% faster time to deployment for new and migrated applications